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How do UK podiatrists promote self-care and support behaviour change in patients with diabetes mellitus?

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A thesis submitted in partial fulfilment of the University's requirements for the Degree of HEE/NIHR Masters by Clinical Research

Certificate of Ethical Approval

Applicant:

Chloe Egan

Project Title:

How do podiatrists in the UK promote foot self-care and support positive behaviour change in patients with diabetes mellitus?

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

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Abstract

Background

Diabetic foot disease places an immense financial burden on the National Health Service. Patient education promoting foot self-care is an integral part of diabetes management yet research shows that increased knowledge may not translate into behaviour change. Behaviour change techniques (BCTs) have the potential to promote foot self-care and reduce the incidence of diabetic foot disease. Therefore the primary aim of this study was to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care. The secondary aim was to identify whether the number of years the podiatrist had been qualified influenced the participants responses.

Method

Ethical approval was obtained from Coventry University. The study was a cross-sectional design with an anonymous, self-administered, web-based questionnaire distributed via email to all members of the College of Podiatry with the Health and Care Professions Council (HCPC) registration working in the UK. A link was also posted on relevant Facebook groups UK Podiatry and footindiabetes. Descriptive statistics were used to analyse data regarding practice of the participants'. The questions investigating the participants' knowledge were analysed using conceptual content analysis, and those that investigated barriers and facilitators were analysed using thematic analysis. The Pearson product-moment correlation coefficient was used to determine the strength of relationships between number of years qualified and frequency of use of behaviour change techniques in consultations, association between use of patient-centred language and use of prescriptive language, and association between respondents reporting that their consultations were patient-led and use of patient-centred language.

Results

The majority of respondents reported using BCTs in their consultations "often" or "very often" and that they "strongly agree or "agree" that their consultations were patient-led. However, the majority of respondents were categorised as having a partial or poor understanding of the terms "behaviour change techniques" and "patient-led consultation". Three themes emerged from the thematic analysis regarding barriers and facilitators to support behaviour change, including "Skills and confidence", "Patients do not want to take control" and "The system". No correlation was found between any of the variables investigated.

Conclusion

This study explored the practice of podiatrists and their use of BCTs using an on-line survey. Respondents believed that they were utilising BCTs and a patient-led approach yet their answers suggested otherwise. Conflict in their answers suggested a lack of understanding of BCTs, which may have led to respondents over reporting their use of BCTs and a patient-led consultation style. A need for institutional changes and organisational support was highlighted by the respondents. This included extra time to undertake training to develop the adequate skills, knowledge and confidence and extra time in appointments to implement a patient-led consultation style in their practice.

Contents

Chapter 1. Background

1.1 Outline

The thesis begins with Chapter 1, a background chapter outlining diabetes, diabetic foot disease, the serious negative impact this can have on the individuals who suffer with it, and the immense financial cost to the National Health Service (NHS). The role of the podiatrist in the management of diabetic foot disease is discussed, and the potential for the use of patient-centred care and behaviour change techniques in a podiatry setting is considered. The existing literature regarding this topic is presented and reviewed, and the rationale for the aims and objectives stated. In chapter 2 the methods are described, including the epistemological stance and methodology of the study, followed by chapter 3 which comprises the results. In chapter 4, the discussion, the principle findings are examined and the strengths and limitations of the study are explored. Implications of findings to clinicians and policy makers and recommendations are stated. Finally, the thesis ends with chapter 5, where conclusions are made.

1.2 Introduction

Diabetes mellitus (DM) is one of the most prevalent chronic diseases in the UK, with an estimated 3.7 million people diagnosed, a further 900,000 undiagnosed, and the number is rising (Diabetes UK 2018). It results in an increased risk of foot problems such as ulceration, gangrene, and infection due to peripheral neuropathy, peripheral arterial disease, reduced joint mobility, and abnormal load distribution (Edmonds 2006). DM is

also the leading cause of non-traumatic limb amputation in the UK, and it has been shown to reduce life expectancy by as much as 20 years. Approximately three in five individuals who have had a diabetic foot ulceration (DFU) and half of individuals who have had major amputations, survive for five years (Diabetic foot audit 2019).

These problems, collectively known as diabetic foot disease, can have a significant detrimental impact on an individuals' quality of life, with research suggesting that individuals with DM are more likely to experience depression and anxiety (Tabak et al. 2014). Diabetic foot disease also places an enormous financial burden on the NHS through primary and community care, outpatient costs, high bed occupancy, and lengthy hospital stays (Kerr et al. 2019). With an estimated expenditure of around £1 in every £100 spent by the NHS in England every year, the cost of health care for diabetic amputation and ulceration is more than that spent on prostate, breast, and lung cancers combined (NHS England, 2014).

Individuals with long term conditions such as DM may be receiving care from several teams at once, including GPs and practice nurses, diabetologists, podiatrists, diabetes specialist nurses, orthotists, and vascular and orthopaedic surgeons. However, it is also important that these individuals are encouraged to manage their own health, including daily foot self-care in their own homes (NHS England 2014). Appropriate disease management and effective foot self-care behaviours can reduce the risk of diabetic foot complications (IDF 2015; NICE 2016), and guidelines published for the International Working Group on the Diabetic Foot (IWGDF) cite good foot self-care behaviours as a

crucial approach in the prevention of DFUs (Bus et al. 2020). Despite this, the literature, including a descriptive cross-sectional study by Neta et al. (2015) suggests that foot self-care behaviours are currently underutilised by patients as a means of preventing DFUs.

Patient education is considered an integral aspect of DM management, and is a way of promoting foot self-care, increasing adherence to foot self-care behaviours and preventing foot disease. In the current pandemic situation there is a need for greater self-care, perhaps more than ever. Clinicians continue to deliver traditional education designed to improve foot self-care by increasing patients' skills and knowledge despite evidence to suggest that it has little effect on outcomes such as ulceration rates (Binning et al. 2018). Education alone is not enough to effectively reduce ulceration and amputation incidence, and increased knowledge rarely translates to positive behaviour change. A Cochrane systematic review assessed 12 randomised controlled trials that evaluated educational programmes for preventing diabetic foot ulcerations (Dorresteijn 2014). They found that although some of the studies suggested positive effects, only 5 of the 12 randomised controlled trials (RCTs) reported the effect of patient education on primary endpoints, and only 1 was deemed as being at a low risk of bias meaning that caution should be taken when interpreting their results. Furthermore, the results of the only RCT that was regarded as having good methodological quality suggested that patient education had no beneficial effect on primary outcomes. The systematic review concluded that there is little evidence to support the effectiveness of patient education for the prevention of DFUs or amputations. It could therefore be suggested that a different approach is required, and behaviour change techniques could be the answer.

To be registered with the Health and Care Professions Council (HCPC) a podiatrist must meet the threshold standards of proficiency that have been set by the HCPC to ensure safe and effective practice. All standards of proficiency must be met by a podiatrist to maintain registration. Standard 13.7 states that a podiatrist must "understand, in the context of chiropody and podiatry: behavioural sciences" (HCPC 2018). Furthermore, according to the Institute for Apprenticeships and Technical Education (2018), after completing the Podiatry apprenticeship (integrated degree) the qualified podiatrist should be able to "establish person-centred podiatry agreed treatment plans, encourage informed decision-making, and encourage and enable appropriate self-care". Although this does not explicitly mention behaviour change techniques (BCTs), the language used suggests that a qualified podiatrist should be aware of and able to use BCTs as part of a patient-centred approach to care. It should also be noted that NICE guidelines 'Diabetic foot problems: prevention and management' (NG19 2015) recommend that patients should be given oral and written information regarding foot care advice and the importance of self-care, but do not currently give recommendations regarding the use of BCTs (NICE 2016). However, they do state that one of their research recommendations is to explore education and psycho-behavioural interventions for prevention of diabetic foot complications and acknowledge that new interventions that target psychological and behavioural factors should be developed.

Podiatrists have regular consultations with individuals with DM, and are therefore in an ideal position to engage in brief behavioural interventions, supporting them to change and improve their self-care behaviours. According to Michie and Johnston (2013) a behaviour change technique can be defined as "an observable, replicable, and irreducible component of an intervention designed to alter or redirect causal processes that regulate behaviour; that is, a technique is proposed to be an 'active ingredient, e.g. feedback, self-monitoring, reinforcement'". BCTs can be used alone or in conjunction with other BCTs as part of a behaviour change intervention (BCI) and be a valuable part of patient-centred care. Patient-centred care is a standard of practice that involves a respect for the patient as a person and their point of view. It is a move away from the paternalistic model of the health professional-patient relationship where the health professional made decisions about the patients' health and the patient complied, and a move towards mutual participation and shared decision making (Pelzang 2010). However, it is important to note that not all BCTs are patient-centred. For the purpose of this thesis, when BCTs are mentioned this is referring to patient-centred BCTs only.

The Behaviour change technique taxonomy v1 (BCTTv1) was developed by Michie et al. (2013) to provide standardisation of the terminology to be utilised to identify the specific BCTs of a behaviour change intervention. It is made up of 93 different BCTs which are grouped into 16 categories including goals and planning, feedback and monitoring, social support, shaping knowledge, natural consequences, comparison of behaviour, associations, repetition and substitution, comparison of outcomes, reward and threat, regulation, antecedents, identity, scheduled consequences, self-belief, and covert

learning. The development of this taxonomy was important as prior to this there was no agreed consensus. The active components of the BCIs reported in studies were often described with different labels, and there was a risk that different BCTs were assigned the same labels, resulting in uncertainty and inaccuracy in reporting (Michie et al. 2013).

There are many BCIs currently being used in healthcare, made up of many different BCTs, delivered on a one to one or group basis, or even via telemedicine. They are being used by health professionals to help individuals with specific health conditions and to change behaviours that may have a detrimental effect on an individuals' health (NICE PH49 2914). However, since the focus of this review is the use of BCTs in a podiatric setting, Motivational Interviewing (MI) and Health Coaching (HC) are discussed in greater detail as they appear to be the BCTs most often used in the existing podiatry literature. MI is a directive, patient-centred approach to counselling that helps facilitate health-related behaviour change. It aims to help individuals explore and resolve any ambivalence towards changing their behaviour, and is based on the assumption that an individuals' motivation to change is increased if there is a gentle negotiation process where the individual themselves articulate the costs and benefits involved, and set their own goals (Treasure 2004).

Health coaching is an intervention that is emerging as a potential tool for health professionals to use to improve health and clinical outcomes for individuals with chronic diseases such as DM (Wolever et al. 2010). Health coaching refers to a diverse set of interventions that apply the principles of MI, and involves patients working towards self-determined goals to promote self-management, increase activation levels, create

sustainable behavioural change, and improve patient satisfaction (NHS England 2018). The approach uses techniques from three core disciplines including performance coaching, health psychology, and clinical training. It is a movement away from the traditional model of 'expert' health professionals directing information 'at' patients and instructing them what to do or giving advice. Instead, health coaching involves health professionals working in partnership with patients, who are seen to be equally as knowledgeable, and experts in their own health (Wolever et al. 2010).

1.3 Background Literature

One of the areas where behaviour change interventions are currently being used in health care is the management of type 2 DM. Type 2 DM management is related to factors such as dietary habits and a sedentary lifestyle, which are both behaviours. Changing self-care behaviours related to diet, physical activity, and weight management is therefore an important part of managing DM. This can help reduce the risk of detrimental health outcomes associated with DM such as retinopathy, nephropathy, and foot disease, but this presents many challenges (NICE PH49 2014). A systematic review and meta-analysis by Cradock et al. (2017) looked at BCTs targeting both diet and physical activity in individuals with type 2 DM, and sought to identify the specific BCTs that were associated with reduction in HbA1C and body weight. They systematically reviewed RCTs carried out between 1975 and 2015 that focused on diet and physical activity. The meta-analyses showed an overall reduction in HbA1C of 0.53% and an overall reduction in body weight of 3.73kg. They identified specific BCTs that were more successful at changing

behaviours in this population. Another area of health care in which BCTs are being used is smoking cessation. Smoking is a leading risk factor contributing to the global burden of disease, and smokers are 30-40% more likely to develop diabetes than non-smokers (Campagna et al 2019). Cigarette smoking is also one of the most important modifiable risk factors for those with diabetes. It is associated with micro and macro vascular damage, endothelial dysfunction, and activation of the blood clotting cascade, increasing the risk of myocardial infarction or cerebrovascular accident, but quitting smoking can reduce this risk substantially (Pan et al 2015). Systematic reviews have shown that BCIs can effectively increase rates of successful smoking cessation but that there is significant heterogeneity in the effects and the strengths (Black et al 2020). A systematic review and meta-regression of biochemically verified smoking cessation rates on BCTs and in interventions and comparators in randomised controlled trials was carried out by Black et al (2020). They found that in person-delivered interventions, greater smoking cessation rates were predicted by BCTs that targeted associative and self-regulatory processes, and in written interventions BCTs targeting rewards predicted higher smoking cessation rates. Like HbA1C control, body weight management, and smoking cessation, foot self-care is a health behaviour hence there is potential to apply what has been learned with other health behaviours to foot self-care behaviours in a diabetic population.

Much of the existing body of literature regarding BCTs in a podiatry specific setting is focused on adherence. Adherence can be defined as the extent to which an individuals' behaviour matches the health professionals' recommendations (Sabate 2013). For people with DM who are at risk of developing foot disease, self-care behaviours do not seem to

be specifically defined in the literature but tend to include daily washing and drying the feet, daily visual foot checks, the application of emollient, refraining from walking bare-footed, receiving regular professional foot-care, ensuring the bath water is not too hot, and following the foot-care advice given by health professionals (McInnes et al. 2011; Bonner et al. 2016). Armstrong and Boulton (2017) suggest that significantly better outcomes are achieved and ulcerations can be prevented when patients are adherent to one or more of these behaviours, and the majority of the existing literature regarding adherence and the prevention of DFU focusses on the wearing of prescription footwear as the target self-care behaviour (Waalijman et al. 2013; Lundvist 2016; Arts et al. 2014). Adherence in those at risk of DFU tends to be low, whilst their confidence and knowledge regarding risks and prevention tends to be high (Dorresteijn et al. 2013). This suggests that this population are aware of the risks and the behaviours required to prevent ulceration, but this is not enough to result in an actual change in their self-care behaviours. The peripheral neuropathy and subsequent lack of pain perception may contribute to this as the individual lacks the feedback loop that usually prompts them to adopt behaviours necessary to avoid injury (Dorresteijn et al. 2013). As poor foot outcomes tends to be linked to poor foot self-care, MI may be beneficial for those at risk of DFU (Gabbay et al. 2011).

Few studies have looked at BCTs and if and how they are being used in a podiatry setting. One study by Tinloy et al. (2014) looked at podiatric physicians' perspectives and their role in promoting self-care in high risk patients with DM. The aim was to explore how podiatrists supported their high-risk diabetic patients to self-care, and whether they used

MI. It was a cross sectional design using a web-based 19-question survey, with most answers being on a 5-point scale. They found that 86% of participants felt that foot self-care was very important in the high-risk diabetic population, and 90% felt that it was part of their job to discuss foot self-care with that patient group. However, only 49% reported that they had behaviour change training and were promoting behaviour change successfully. The amount that the podiatrists used MI did not correlate to any of the demographic variables. The main barriers to the use of MI reported by the podiatric physicians included a lack of time and lack of patient engagement. The authors concluded that most podiatrists believed that foot self-care and their role in promoting this in the high-risk diabetic population was important, but that few had knowledge of how to carry out MI, and if behavioural techniques such as this were to be used more, then more time would be required. The study population was clearly defined, and demographics including age, duration of time qualified, and geographical location were noted, increasing the generalisability of their results (Salkind 2010b). It should be noted that this study was carried out in America, where podiatrists have a Doctor of Podiatric Medicine degree and are therefore more highly qualified than UK podiatrists. This may influence the way patients perceive podiatrists as they may be more highly regarded, and patients may therefore be more likely to listen to and act on their advice. Furthermore, as healthcare in the USA is privatised, the clinicians may have more time during their consultations. Interestingly, despite this, the US podiatrists in the Tinloy study reported the same barriers as those in the UK, including a lack of time and a lack of patient engagement.

A study by McMurray et al. (2002) aimed to assess whether an intervention with behavioural components, or what they called intensive education and care management, could improve blood glucose control, result in behaviour change, and reduce the incidence of complications including lower limb amputations in patients with DM. They reported that one of the interventions the participants received was individualised self-management education and motivational coaching, i.e. a behaviour change technique. They found that there was a statistically significant improvement in self-management behaviour including foot self-care (applying emollient, daily foot checks, and wearing prescription footwear), knowledge, quality of life, blood glucose control, and amputations after 12 months in those that received the intervention versus the control group who received usual care. The study was an RCT, however, although the authors reported the methods of randomisation and concealment of allocation, the randomisation method was only quasi-randomised, making adequate concealment of allocation impossible and resulting in a possible over estimation of the treatment effect (Hrobjartsson et al. 2014). The confounding variables were therefore not controlled, and as a result there is no way to know whether the improvement in self-management was due to the study intervention or the confounding variables. Cause and effect cannot be established, and the internal validity of the study is reduced (Patino and Ferreira 2018). Furthermore, the study population comprised individuals with type 1 or 2 DM with end stage renal disease. Due to this, external validity is reduced and the results should not be generalised to the broader population of individuals with DM (Fincham 2008).

A study carried out by Gershater et al. (2011) investigated whether patient education could be used to prevent foot ulcers in a diabetic population. In this randomised controlled trial, the intervention included motivational components such as problem solving, unspecified social support, and information about health consequences, with incidence of ulceration as the outcome measure. They concluded that their intervention did not improve ulceration rates compared to the control group, however statistical conclusions regarding the effect of the intervention could not be drawn due to small participant number.

A case based pilot study by Keukenkamp et al. (2017) looked at whether MI could be used to change foot self-care behaviours of participants with DM and increase adherence to foot self-care behaviours. They found that MI changed health behaviours in the short term as adherence improved by 35% compared to the control group at week one, but this had returned to baseline level after 3 weeks. This is consistent with existing research suggesting that further behavioural interventions are required for a behaviour change to be maintained over time (Kwasnicka et al. 2016). The results of this study also suggested that the intervention was not successful for changing the foot self-care behaviours of resistant participants with belief-based barriers. This may have been due to normal population variation, or may have been due to the manner in which the intervention was delivered. This study used a set protocol for all participants rather than individualised delivery, a method which has been suggested to reduce the effectiveness of MI, especially in those individuals particularly resistant to change (Miller and Rose 2009). It

should be noted that this study had only 10 participants and therefore the results did not reach statistical significance.

A pilot RCT study by McBride et al. (2016) explored whether decision-making efficacy and adherence to foot treatment could be increased in patients with active foot ulcerations using an intervention with motivational components including action planning, social support, and information about health consequences. They found that the intervention did not improve wound healing rate, self-efficacy, or adherence to treatment. The duration of intervention was not documented, and the sample size was low (N=56), leading to reduced external validity and poor reliability.

A randomised pilot study by Corbett et al. (2003) investigated whether an educational intervention with motivation components including problem solving, information, and social support could improve foot-care knowledge, self-efficacy, and foot self-care practices in individuals with DM. Although not statistically significant, they found that their intervention improved the participants' knowledge, confidence, and reported foot-care behaviours. However, as with the study by McMurray et al. (2002), this study was carried out on a very specific group of participants, but in this case, all were house-bound. Using a convenience sample such as this decreases external validity as these participants are not representative of the wider population, thus the results cannot be generalised to the whole population of individuals with DM (Henderson and Page 2007). Furthermore, the number of participants studied in the trial was not based on an

appropriate sample size calculation and was therefore underpowered, reducing the external validity of results.

The two studies that showed their interventions with a motivational component were effective at changing outcomes had small participant numbers and were carried out on specific populations of individuals in hospital dialysis or house bound settings, meaning that caution should be taken when applying the results to the wider population of individuals with DM. The study by Keukenkamp et al. (2017) reported the use of behaviour change techniques and motivational components from 10 domains in their intervention whereas the other studies stated that their interventions had components from only three domains including goals and planning, social support, and natural consequences. This may mean that they failed to entirely describe the intervention used or the behaviour change theory underpinning the intervention in their study (Michie et al. 2016).

The existing research differs in aims, delivery and duration of intervention, outcome measures, and outcomes but all seem to suggest that BCTs have the potential to improve patient care and clinical outcomes in a podiatry setting. On the whole, the existing studies are insufficiently powered with poor internal and external validity, indicating a gap in the literature. These studies show promise for the use of BCTs in a diabetic foot care setting, and a need for further, robust research on the topic of the use of behaviour change techniques in a podiatry setting. BCTs have been used successfully by health professionals

managing conditions such obesity, DM, and hypertension (Montano and Kasprzyk 2008). Insulin resistance as a result of obesity is known to increase the likelihood of developing hypertension and type 2 DM thus individuals often have all three of these comorbidities (Zanella et al. 2001). It could therefore be suggested that the patients accessing podiatry diabetic foot services are a similar population as those mentioned above and BCTs may therefore be successful in changing foot self-care behaviours also.

1.4 Aims, Objectives and Hypotheses

1.4.1 Aims

The primary aim of this study was to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care. The secondary aim was to identify whether duration of qualification influenced the participants' responses to give insight as to whether the use of BCTs and a patient-led approach has changed over time.

1.4.2 Objectives

To conduct a cross sectional study of practicing UK podiatrists over a three month period, using a self-administered web-based questionnaire that included open and closed questions.

1.4.3 Hypotheses

UK podiatrists report minimal understanding and use of BCTs and a patient-led consultation style.

UK podiatrists who qualified more recently have a greater understanding of BCTs and use a patient-led consultation style more than those who have been qualified longer.

1.4.3.1 Null Hypothesis

Duration of qualification has no effect on podiatrist understanding or use of BCTs.

Chapter 2. Methods

2.1 Epistemology and Methodology

A critical understanding of the research process can only be developed by considering the theoretical and philosophical basis of different approaches to research, and this in turn enables researchers to make an informed choice regarding the method and design of the proposed study (Sim and Wright 2002). According to Guba and Lincoln (1998) three sequential questions must be asked: The ontological question, the epistemological question, and the methodological question. The nature of reality, knowledge, and the process of finding out what is known must be questioned.

The primary aim of this study was to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care. The secondary aim was to identify whether duration of qualification influenced the participants responses. The ontological position is therefore that of a single underlying reality, and the epistemological stance is positivist, and fits into empirico-analytical paradigm. This paradigm is deemed to be the scientific method of generating knowledge and is associated with quantitative research (Higgs and Titchen 1995).

It is important to identify the ontology and epistemology so as to ensure alignment with the methodology used. Quantitative research such as this can be experimental, quasi-

experimental, correlational, or non-experimental (descriptive) in nature (Maltby et al. 2010). This study was descriptive as this is best suited to the research question and is designed to determine what exists, or in this case what is happening rather than trying to determine cause and effect. There is also a correlational element due to the exploration of some of the relationships between variables. A limitation of this quantitative, positivist approach is that it does not allow for subjectivity, there is no option for the participant to express themselves (Sim and Wright 2000). Open questions were therefore included to add a qualitative element to the questionnaire.

2.2 Methods

2.2.1 Study Design

The study was a cross-sectional design using an anonymous, self-administered web-based questionnaire. The Online Survey website was used as it is designed for use in academic research.

2.2.2 Validity

To the author's knowledge a reliable, validated questionnaire tool to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care does not currently exist. Using a non-validated survey tool decreases the external validity and reliability of

the results of a study (Willis 2005), however, as no validated tool was available, a questionnaire was created by the author. To improve the questionnaire design including usability and technical functionality, as well as to increase the likelihood that the questions posed would answer the research questions, it was peer reviewed by a small number of experts in behaviour change. Involving experts in the creation of the questionnaire strengthened the methodology and increased face and content validity (Sim and Wright 2000). A copy of the questionnaire can be found in Appendix 2.

To ensure a representative sample was captured from the entire podiatrist population and increase internal and external validity, inclusion criteria were set. These were podiatrists with current HCPC registration working within the UK (private practice or NHS) and with access to the internet. Exclusion criteria were podiatrists without HCPC registration, working outside the UK or without access to the internet. Demographic data including participant age, gender and duration of time qualified was also collected to answer the secondary aim of the study and identify whether the duration of qualification of participants influenced their responses. Participant age was excluded from the analysis as it was decided that duration of qualification was more relevant.

2.3 Recruitment

Once Coventry University ethical approval was gained, the College of Podiatry Research and Development Committee was approached, and permission requested for them to email their members with an invitation to participate in the study. Once this was granted,

an email with a web link to the questionnaire was sent out by them to all their members, of which there were approximately 10,385 at the time. Questionnaires have notoriously poor response rates, which can lead to non-response bias. A small sample decreases the representativeness and therefore generalisability of the sample (Fincham 2008). To help prevent this, a second 'reminder' email was sent 2 weeks after the initial invitation, and a link to the questionnaire was also posted on the footindiabetes and UK Podiatry Facebook groups which have 1,744 and 6,136 members respectively. Data collection was carried out over a 3-month period (06/07/18 - 07/10/18).

2.4 Ethics and Consent

The project and all supporting documentation were submitted to CU ETHICS Online and was deemed to be 'low risk' in terms of ethical considerations as the participants were clinicians and not patients, and the data collected was anonymous. Participants were asked to read the participant information sheet and the informed consent form which outlined the aim of the study, how long it would take to complete the survey, and who the investigator was. It clearly stated that any information provided by participants would be kept anonymous in any publications and would be held securely on the University' OneDrive until 1/12/2023, after which time it will be deleted. It also stated that once the survey was completed the participant would be unable to withdraw from the study due to the answers being fully anonymised. As part of the questionnaire, there was a separate tick box for each consent statement to provide evidence that each element had been read and consented to and therefore comply with General Data Protection Regulation

(GDPR). A copy of the participant information sheet can be found in Appendix 1, and the questionnaire can be found in Appendix 2.

2.5 Data analysis

Both quantitative and qualitative data was collected.

2.5.1 Quantitative Data

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) version 25. The primary analysis of the data was descriptive statistics for example frequency distribution. Descriptive statistics describe the basic features of the data and provide simple summaries of the sample and measures and should be reported in any research paper (Kerr et al. 2002). The Pearson product-moment correlation coefficient was used to determine the strength of the relationships between:

- Number of years qualified and frequency of use of behaviour change techniques in consultations
- Association between use of patient-centred language and use of prescriptive language
- Association between respondents reporting that their consultations are patient-led and use of patient-centred language.

This statistical test was used as it is most appropriate for investigating the strength of a linear association between two quantitative, continuous variables such as duration of time qualified and frequency of use of behaviour change techniques in consultations, therefore answering the secondary aim of the study.

The scaled data from 5-point Likert scale questions was analysed as continuous data for ease of analysis. Pearson's correlation coefficient, denoted as *r*, can lie between +1 and -1. A value of 0 indicates no association between the two variables, a value of greater than 0 indicates a positive association, and a value of less than 0 suggests a negative association between the two variables (Field 2013).

2.5.2 Qualitative Data

2.5.2.1 Content Analysis

The open-ended questions were analysed qualitatively. Question 8 "What does the term 'behaviour change techniques' mean to you?", and question 10 "What does the term 'patient-led consultation' mean to you?" were analysed using conceptual content analysis, a research tool used to quantify and analyse the presence, meanings and relationships of words, themes, or concepts within qualitative data. This was then used by the researcher to make inferences about the messages within the text (Columbia Public Health (2019).

Steps for conducting the conceptual content analysis:

1. The level of analysis was decided - words, phrases, sentences and themes.
2. Five pre-defined concepts to code were decided and are outlined below – good understanding, partial understanding, unsure, poor understanding, no understanding. This allowed for the researcher to stay focussed and examine the data for specific concepts.
3. It was decided that frequency of concept rather than just existence of concept would be coded for and the number of times a concept appears within the text would be counted.
4. A decision was made as to how concepts would be distinguished – a low level of implication would be allowed and words that explicitly state the concept would be used. Those that merely imply the concept merited separate categories.
5. Once the framework had been applied, the final analysis involved the application of quantitative techniques. Descriptive statistics were used to summarise the findings. Once the framework had been applied, the final analysis involved the application of quantitative techniques. Descriptive statistics including frequency counts and percentages were used to summarise the findings.

Table 2.1. Coding framework with 5 predefined concepts to code for Questions 8 and 10

	Question 8. "What does the term 'behaviour change techniques' mean to you?"	**Question 10. "What does the term 'patient-led consultation' mean to you?"**
Good understanding	• Citing specific behaviour change techniques e.g. motivational interviewing, health coaching, cognitive behavioural therapy and elaborating on this • Includes terms/phrases/components of behaviour change techniques such as 'encourages ownership of own health', 'goal setting', 'empower', 'patient activation', 'less directive approach', 'intervention', tools to change behaviour'	• Suggests a trend away from paternalistic 'doctor-knows-best' culture • Suggestion of a less directive approach • Suggests patients at the centre of decision-making • Suggests focus on the patients' priorities rather than the clinicians'

	• Captures the idea of a shift in behaviour • Suggests is a method/strategy/technique/intervention/or component of an intervention designed to change behaviour	• Words or phrases that encompass the idea of patient-centred care with patients being supported to make choices about and take control of their own health
Partial understanding	• Some of the above mentioned but also conflicting words/phrases, ambiguity, or incorrect definitions • Shows some understanding of the concepts but not noting that it is an intervention • Where the participant has merely stated an example of a technique with no further elaboration • Where the participant has merely rearranged the question into an answer e.g. “Techniques to change behaviour”	• Some of the above mentioned but also conflicting words/phrases, ambiguity, or incorrect definitions • Shows some understanding of the concepts • Where the participant has merely rearranged the question into an answer e.g. “a consultation led by the patient”

Unsure	• The participant expresses and acknowledges their uncertainty • Use of phrases such as “not sure”, or “nothing” • Use of a question mark at the end of the answer	• The participant expresses and acknowledges their uncertainty • Use of phrases such as “not sure”, or “nothing” • Use of a question mark at the end of the answer
Poor understanding	• Not capturing the idea of a shift in behaviour • Failure to acknowledge it is a method/strategy/intervention to change behaviour • Using terms such as “compliance” or “concordance” • A focus on “education” or “advice” • Suggestion of a directive approach –“telling” • Stating an incorrect definition	• Not capturing the idea of patients taking control of their own health • Suggestion of a paternalistic “doctor-knows-best” approach • A focus on clinician giving advice or educating the patient • Suggestion of a directive approach – clinician “telling” • Stating an incorrect definition
No understanding	• Participant expresses zero knowledge e.g. “nothing”	• Participant expresses zero knowledge e.g. “nothing”

2.5.2.2 Thematic Analysis

The remaining open-ended questions, question 15. “What do you think are the barriers to implementing a patient-led consultation style in your practice”, and question 16. “What training or resources do you think would help increase your ability to negotiate positive behaviour change with your patients?” were analysed using thematic analysis rather than content analysis. This different type of analysis was used because the questions are based more on the respondents’ opinion and there is no right or wrong answer so predefined concepts based on understanding would not be suitable. Thematic analysis is a qualitative research method for identifying, analysing, organising, describing and reporting themes found within a data set. This type of analysis was chosen as it allows for a rich and detailed description of the data collected via open ended questions (Braun and Clarke 2006).

The six-phase framework for conducting thematic analysis suggested by Braun and Clarke (2006) was used to conduct the analysis as outlined below:

1. The reviewer familiarises themselves with the data
2. Initial codes are generated
3. Categories are formed
4. Reviewers search for themes
5. Themes are defined
6. Write up

The analysis of questions 15 and 16 was combined as they explore the same concept and it would seem artificial to analyse them separately.

2.5.3 Quality

It is imperative that qualitative research is conducted in a rigorous and methodical way, to ensure meaningful and useful results. The coding framework used for the content analysis was peer reviewed before being rigorously applied by two coders. The process of thematic analysis was also peer reviewed and changes were made to the names of the themes (see appendix 4). The transparent recording of the processes used for the qualitative part of the analysis as detailed above help the reader assess the replicability of the process. This and the process of undertaking peer review helps reduce researcher bias and enhance rigour and trustworthiness (Columbia Public Health 2019; Braun and Clark 2006).

2.5.4 Reflexivity

Due to the close nature in which qualitative researchers engage with the research process and study participants it is rarely possible to completely avoid personal bias. To increase the credibility of their findings, it is therefore important that such researchers recognise and make clear to readers who they are, their credentials, profession, gender, experience and training so that the readers can judge how these factors may have influenced how the researcher perceives and interprets things (Pope 2000).

When carrying out qualitative research it is important to practice reflexivity (Dodgson 2019). Qualitative research is subjective, and therefore the researcher must continually

reflect upon the research process and practice self-awareness to prevent researcher influence (Dodgson 2019). Reflexivity is extremely important in qualitative research as the researcher can affect all stages of the study, including the creation of the data collection tool (in this case the questionnaire), data collection, data analysis, and the reporting of the data. By considering the relationships between the participants and themselves and practicing reflexivity, it is less likely that the researchers own beliefs will bias the study, and therefore the credibility, quality, and trustworthiness of the study are enhanced (Barrett et al. 2020).

Chapter 3. Results

3.1 Descriptive Statistics

There were 78 responses over the 3-month data collection period, however not every respondent completed all questions.

Table 3.1 Participant characteristics (*n=78)*

Characteristic	Frequency (percentage) of total respondents
Gender	
Male	14/78 (18%)
Female	63/78 (81%)
Prefer not to say	01/78 (01%)
Age range	
18-30	09/78 (12%)
31-40	22/78 (28%)
41-50	26/78 (33%)
51-60	20/78 (26%)
61-70	01/78 (01%)
Duration of qualification (years)	
1-5	24/78 (31%)
6-10	11/78 (14%)
11-15	11/78 (14%)
16-20	08/78 (10%)
>20	24/78 (31%)

Table 3.1 illustrates the demographics of the podiatrists who participated in the study. The majority of respondents were female, and the highest proportion reported being between 41 and 50 years of age and being qualified for more than 20 years.

3.2 Results for questions about practice of podiatrists regarding patient-centred support versus prescriptive instruction

Table 3.2 Summary of the responses to questions 9-14

	Frequency (percentage) of total respondents
Frequency of use of behaviour change techniques (n=77)	
Very often	37/77 (34%)
Often	26/77 (48%)
Unsure	07/77 (09%)
Not very often	05/77 (07%)
Not at all	02/77 (03%)
My consultations are patient-led (n=76)	
Strongly agree	21/76 (28%)
Agree	40/76 (53%)
Unsure	10/76 (13%)
Disagree	05/76 (07%)
Strongly disagree	0
In my consultations I use language such as "do..., don't..., can you..., will you..., you could..., you should..." (n=76)	
Strongly agree	33/76 (13%)
Agree	10/76 (43%)
Unsure	05/76 (07%)
Disagree	24/76 (32%)
Strongly disagree	04/76 (05%)

In my patient consultations I use language such as "What are your thoughts...? What ideas do you have...? What might work for you...? How have you got on before...? What might you manage...? How will you manage this...? What are you going to do next...?" (n=76)	
Strongly agree	39/76 (36%)
Agree	27/76 (51%)
Unsure	05/76 (07%)
Disagree	05/76 (07%)
Strongly disagree	0
How confident are you at negotiating positive behaviour change with your patients? (n=77)	
Not at all confident	11/77 (14%)
Confident	54/77 (70%)
Very confident	12/77 (16%)
During your undergraduate BSc Podiatry degree were you taught about health psychology and the psychology of self-care? (n=76)	
Yes	23/76 (30%)
No	46/76 (61%)
Not sure	07/76 (09%)

Table 3.2 summarises the participant responses to questions 9-14. These questions were designed to explore part of the primary aim of the study, specifically the practice of podiatrists regarding patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care.

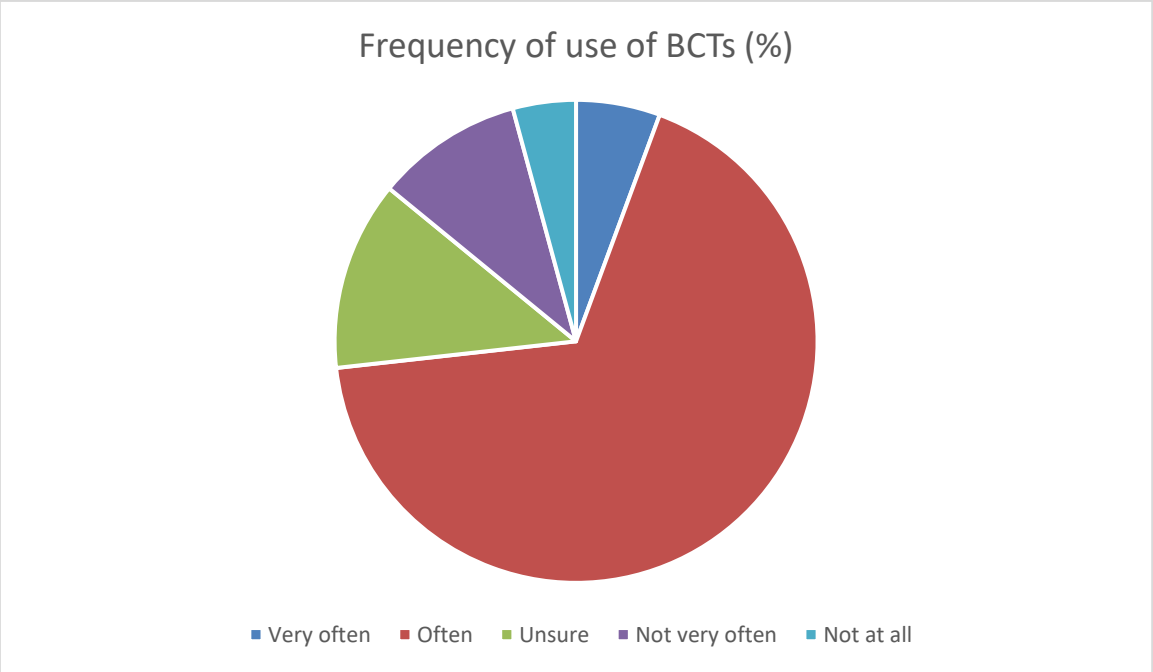

Figure 1. Chart to show reported frequency of use of BCTs (%)

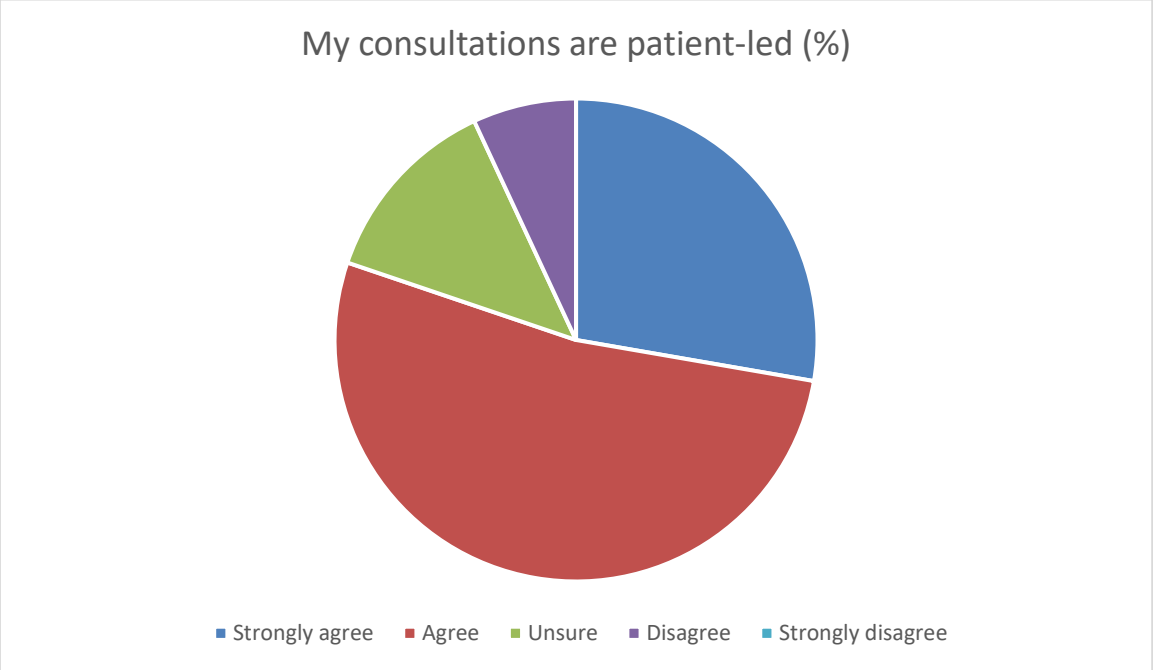

Figure 2. Chart to show the degree to which respondents agreed with the statement “My consultations are patient-led”.

The majority of respondents reported using behaviour change techniques in their consultations “often” or “very often” (82%) and that they “strongly agree or “agree” that their consultations are patient-led (81%), highlighted in figures 1 and 2. The highest proportion of respondents agreed that they use patient-centred language in their consultations (43%), yet contradictorily, the highest proportion (51%) also agreed that they use directive language in their consultations. Seventy percent of respondents reported being confident in negotiating behaviour change with their patients and only fourteen percent reported being not at all confident. Over sixty percent of respondents reported not being taught about health psychology and the psychology of self-care in their undergraduate BSc Podiatry degree.

3.2 Association between demographics and responses

The Pearson correlation coefficient (r) can be a value within the range of +1 to -1. A value of 0 suggests that there is no association between two variables. A value greater than 0 indicates a positive association (as the value of one variable increases so does the value of the other variable), and a value of less than 0 suggests a negative correlation (as the value of one variable increases the other decreases). The stronger the association between the two variables, the closer the Pearson correlation coefficient (r) will be to +1 if positive or -1 if negative.

Table 3.2.1 Association between number of years qualified and frequency of use of behaviour change techniques in consultations, number of years qualified and frequency of use of behaviour change techniques in consultations, and answers to questions 11 and 12; use of patient-centred language and use of prescriptive language

		Please rate to what extent you agree with the following statement: In my patient consultations I use language such as "What are your thoughts...? What ideas do you have...? What might work for you...? How have you got on before...? What might you manage...?	Frequency of use of behaviour change techniques in your consultations
Please rate to what extent you agree with the following statement: In my patient consultations I use language such as "do..., don't..., can you..., will you..., you could..., you should..."	Pearson Correlation Sig. (2 tailed) N	-.084 .471 76	
My consultations are patient-led	Pearson Correlation Sig. (2 tailed) N	.162 .162 76	
Number of years qualified	Pearson Correlation Sig. (2 tailed) N		-.058 .614 77

A Pearson's correlation co-efficient of -0.058 suggests a negligible association between the number of years the respondent has been qualified, and the reported frequency of use of behaviour change techniques in their consultations. A Pearson's correlation co-efficient of -0.084 suggests a negligible negative association between respondents reporting using prescriptive language such as "do…, don't..., can you..., will you..., you could..., you should..." and those reporting using more patient-led language such as "What are your thoughts...? What ideas do you have...? What might work for you...? How have you got on before...? What might you manage...?". A Pearson's correlation co-efficient of 0.162 suggests a negligible association between answers to question 10a "My consultations are patient-led" and question 12 "Please rate to what extent you agree with the following statement: In my patient consultations I use language such as "What are your thoughts...? What ideas do you have...? What might work for you...? How have you got on before...? What might you manage...?".

3.3 Understanding of patient focussed consultations

3.3.1 Question 8. What does the term 'behaviour change techniques' mean to you?

Table 3.6

Pre-defined concept	Frequency (percentage) of total respondents
Good understanding	10/71 (14%)
Partial understanding	35/71 (49%)
Poor understanding	23/71 (32%)
No understanding	01/71 (1%)
Unsure	02/71 (3%)

3.3.2 Question 10. What does the term 'patient-led consultation' mean to you?

Table 3.7

Pre-defined Concept	Frequency (percentage) of total respondents
Good understanding	13/72 (18%)
Partial understanding	38/72 (53%)
Poor understanding	18/72 (25%)
No understanding	01/72 (1%)
Unsure	02/72 (3%)

The results for both questions were similar. Around half of respondents were categorised to have a partial understanding of the terms 'behaviour change techniques' and 'patient-led consultation' where they showed some understanding of the concepts, but included inconsistencies or some incorrect or ambiguous answers also. For both questions, the next largest proportion of respondents were assessed as having a poor understanding. For both questions 3% of participants were categorised as being unsure, and 1% showed no understanding at all. Only 14% of respondents were deemed as having a good understanding of the term 'behaviour change techniques', and 18% were deemed as having a good understanding of the term 'patient-led consultation'.

3.4 Thematic Analysis

3.4.1 Themes

Three themes emerged from the analysis of the data regarding barriers, and training or resources to support behaviour change. These are outlined below:

- Skills and confidence
- Patients do not want to take control
- The system

Theme 1. Skills and confidence

This theme captured how confident respondents felt about using behaviour change techniques in their consultations, and whether they felt that they had the skills to do so. A lack of appropriate training and skills was reported by many respondents as being a barrier to implementing a patient-led consultation style in their practice, with some citing "Not knowing how to do it" (response ID 346018-346009-37781403) and "Lack of training" (response ID 3460-346009-37777810) as reasons. Confidence was also an issue, with respondents citing "Low confidence" (response ID 3460-346009-38568995) or "Knowledge that I am doing it right" (response ID 346018-346009-37787242) as barriers. Most respondents felt that training would help increase their ability to negotiate positive behaviour change with their patients, with some citing specific behaviour change training such as "Motivational interviewing training" (response ID 346018-346004-38942443) and "Health coaching training" (response ID 346018-346009-37786179). Both undergraduate and postgraduate training was suggested as a possible facilitator.

Theme 2. Patients do not want to take control

Respondents felt that their patients do not want to take control of their own health or foot care and that this was a barrier to them using a patient-led consultation style. This was illustrated by responses including "Patient belief that they do not need to participate in own care" (response ID 346018-346009-37856123), and "Patients do not want to take control of their health" (response ID 346018-346009-37778228). Some respondents felt that a lack of patient compliance was a barrier to their use of a patient-led consultation

style, and that many patients "Just want us to make it better" (response ID 346018-346009-38535374).

Theme 3. The system

Broad institutional factors seemed to impact on the clinicians' ability to implement a less directive approach in their consultation style. Time was an important issue, with the majority of respondents citing "Time" or "Time constraints" as a barrier to implementing a patient-led consultation style in their practice, and "More time" as a facilitator. Lack of continuity with patients also seemed to be a concern "Lack of follow up from the next podiatrist" (response ID 346018-346009-377827), as well as a "Lack of ongoing support" (response ID 346018-346009-39520355). Some respondents felt that "A better working relationship with other health practitioners" (response ID 346018-346009-37778228) would be helpful, particularly those who work in psychology.

Chapter 4. Discussion

4.1 Use of BCTs in more established contexts

4.1.1 HbA1C and body weight

A systematic review and meta-analysis by Cradock et al. (2017) looked at BCTs targeting both diet and physical activity in individuals with type 2 DM, and sought to identify the specific BCTs that were associated with reduction in HbA1C and body weight. They systematically reviewed RCTs carried out between 1975 and 2015 that focused on diet and physical activity. The meta-analyses showed an overall reduction in HbA1C of 0.53% (95% CI P< 0.00001) and an overall reduction in body weight of 3.73kg (95% CI P = 0.002). They identified four BCTs that were more successful at changing behaviours in this population, including 'instruction on how to perform a behaviour', 'behavioural practice/rehearsal', 'demonstration of the behaviour' , and 'action planning'. The researchers used the most up to date BCT taxonomy available at the time to code interventions (Michie et al. 2013), and stated their coding process in a transparent manner, detailing the coding procedure and results. This detail increases the credibility of findings, enables the reader to assess the process, ensuring meaningful results and allows future researchers to replicate the process (Cook 2000). Furthermore, two authors independently coded the studies, and a third independent coder assessed the results of the coding and made the final decision in the event of disagreements. Researcher triangulation such as the use of multiple coders in this way can result in a more complex understanding of the data. The limitations of the study were that the large heterogeneity resulted in a reduced power of the study and decreased robustness. Furthermore, it was not possible for the reviewers to code the dose, frequency, or the sequence in which the BCTs were used, or to determine which BCTs were related to the initiation or ability to maintain a change in behaviour.

4.1.2 Smoking cessation

Another area of health care in which BCTs are being used is smoking cessation. Smoking is a leading risk factor contributing to the global burden of disease, and smokers are 30-40% more likely to develop diabetes than non-smokers (Campagna et al 2019). Cigarette smoking is also one of the most important modifiable risk factors for those with diabetes. It is associated with micro and macro vascular damage, endothelial dysfunction, and activation of the blood clotting cascade, increasing the risk of myocardial infarction or cerebrovascular accident, but quitting smoking can reduce this risk substantially (Pan et al 2015). Systematic reviews have shown that BCIs can effectively increase rates of successful smoking cessation but that there is significant heterogeneity in the effects and the strengths (Black et al 2020). A systematic review and meta-regression of biochemically verified smoking cessation rates on BCTs and in interventions and comparators in randomised controlled trials was carried out by Black et al (2020). They found that in person-delivered interventions, greater smoking cessation rates were predicted by BCTs that targeted associative and self-regulatory processes, and in written interventions BCTs targeting rewards predicted higher smoking cessation rates. They noted that many of the existing reviews focussed on specific modes of intervention delivery, or for specific populations, suggesting that other characteristics of the interventions may also vary between trials and influence the effectiveness. This should be considered in future when planning studies investigating the effect of BCTs in a podiatry setting.

4.2 Principle findings

4.2.1 Practice and understanding of podiatrist

The primary aim of the study was to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care. The hypothesis was that UK podiatrists report a minimal understanding and use of BCTs and a patient-led consultation style in their practice.

With regards to current practices, the majority of respondents reported using behaviour change techniques in their consultations “often” or “very often” and that they “strongly agree or “agree” that their consultations are patient-led. However, with regards to understanding, the majority of respondents were categorised as having a partial or poor understanding of the terms “behaviour change techniques” and “patient-led consultation”. This conflict suggests a lack of understanding of the terms and may have led to respondents over reporting of their use of behaviour change techniques and a patient-led consultation style.

The highest proportion of respondents agreed that they use patient-led language in their consultations, yet the highest proportion also agreed that they use directive language in their consultations, showing a conflict in the data. Furthermore, a further conflict was shown as 87% of respondents reported being “confident” or “very confident” at

negotiating behaviour change with their patients, yet “skills and confidence” was identified as an important theme following thematic analysis of the barriers and facilitators to implementing a patient-led consultation style in their practice and negotiating positive behaviour change with their patients. In essence, there was a mismatch between the reported understanding and use of BCTs and a patient-led approach and the true understanding and use, based on the conflicts in the data. It might be that the respondents were reporting accurately based on their poor knowledge, resulting in the contradictory answers given.

The results of the thematic analysis also captured the idea that the respondents felt that there are systemic institutional issues such as lack of time and support to learn and then use behaviour change techniques, which in turn may result in clinicians not having the adequate skills, knowledge or confidence required to implement a patient-led consultation style in their practice. With the more directive consultation style continuing, it is perceived that patients are then not taking responsibility for their own health/foot care and want the clinicians to take responsibility for this.

4.2.2 Influence of duration of qualification on responses

The secondary aim was to identify whether the number of years a podiatrist had been qualified influenced their responses. The hypothesis was that podiatrists who qualified

more recently would report a greater understanding of BCTs and report using a patient-led consultation style more than those who have been qualified for longer, as this approach is a movement away from the more traditional paternalistic approach. The null hypothesis was therefore that the duration of qualification would have no effect on the podiatrists' reported understanding or use of BCTs and patient-led consultation style. The results suggest a negligible association between the number of years qualified and reported frequency of use of behaviour change techniques in consultations, so the hypothesis is rejected and the null hypothesis accepted. This may have been due to the overall lack of understanding across the whole group of respondents.

4.2.3 Correlations

With regards to the other associations investigated, there was a negligible association between the use of patient-centred language and use of prescriptive language, and association between respondents reporting that their consultations are patient-led and use of patient-centred language. It seems logical that if a podiatrist was using patient-centred language they would not also be using prescriptive language as the two contradict each other, so you would have expected a negative association. It might also be logical to expect that those reporting that their consultations are patient-led would also report the use of patient-centred language, and a positive correlation would be seen. The lack of significant association was likely due to the poor understanding of BCTs and a patient-led consultation style which led to inaccurate reporting.

4.3 How consistent is it with existing literature?

Eighty two percent of respondents in this study reported using behaviour change techniques in their consultations “often” or “very often”, and 87% of respondents reported being “confident” or “very confident” at negotiating behaviour change with their patients. This conflicts with results from a cross-sectional study carried out by Tinloy et al. (2014) that explored how American podiatrists supported their high risk patients with DM to self-care. In the Tinloy study, only 49% of respondents reported undertaking behaviour change training and promoting behaviour change successfully. However, it should be noted that following thematic analysis the majority of respondents in this study were categorised as having a partial or poor understanding of the terms ‘behaviour change techniques’ and ‘patient-led consultation’ which may have led to respondents over reporting their use of behaviour change techniques, meaning that the results may actually be more similar to that of the existing literature than they appear. Like the Tinloy study, the results of this study suggested that the demographic variables including the age, gender or the duration of qualification of the participants did not correlate with the amount that the podiatrists used behaviour change techniques in their practice. Furthermore, in this study time was an important issue, with the majority of respondents citing “Time” or “Time constraints” as a barrier to implementing a patient-led consultation style in their practice. This is consistent with the findings from the Tinloy study who reported that a lack of time was the main barrier for using MI in their patient consultations.

With regards to the reported barriers to implementing a patient-led consultation style in their practice, three main themes emerged including ‘skills and confidence’, ‘patients do not want to take control’, and ‘the system’. These results suggest that that for podiatrists to implement a patient-led consultation style institutional change and organisational support is required. This fits with the existing literature, including a recent narrative review carried out by Harrison-Blount et al. (2019). The study suggested minimal evidence exists regarding the barriers to changing professional practice in the podiatry profession, but there is a body of literature on the topic of barriers to change and strategies to implement change in other health professions which could be used to inform change.

It is important to note that the Tinloy study was carried out in America. Caution should be taken when comparing the results of this study to the results of those undertaken in America as Podiatrists in the USA are more highly qualified than UK podiatrists as they are Podiatric Physicians having undertaken a medical degree. This may influence the way in which patients perceive them as they may be more highly regarded, and patients may be more likely to listen to and act on their advice. Furthermore, as health care in the USA is privatised, the clinicians may have more time during their consultations.

4.4 How does this relate to current training?

To be registered with the Health and Care Professions Council (HCPC) a podiatrist must meet the threshold standards of proficiency that have been set by the HCPC to ensure safe and effective practice. All standards of proficiency must be met by a podiatrist to maintain registration. Standard 13.7 states that a podiatrist should "understand the key concepts of the knowledge base relevant to their profession" and must "understand, in the context of chiropody and podiatry: behavioural sciences" (Health and Care Professions Council 2018). The author of this thesis approached the College of Podiatry (CoP) and requested further information regarding the curriculum of the BSc Podiatry degree. A representative of the CoP responded stating that the core curriculum is set by the CoP but how it is delivered is decided by the individual higher education institutions. The core curriculum included psychology and the application of psychological approaches to health promotion. However, in this study over sixty percent of respondents reported not being taught about health psychology and the psychology of self-care in their undergraduate BSc Podiatry degree. This could mean that either the respondents were not taught this in their undergraduate Podiatry degree, or more likely that they were taught it but were not able to recall being taught it, both of which suggest an increase in health psychology/behaviour change training and an emphasis on this approach may be required at undergraduate level to move this up the podiatrists' agenda and increase awareness. According to the Institute for Apprenticeships and Technical Education (2018), after completing the Podiatry apprenticeship (integrated degree) the qualified podiatrist should be able to "establish person-centred podiatry agreed treatment plans, encourage informed decision-making, and encourage and enable appropriate self-care".

This suggests that a qualified podiatrist should be aware of and able to use BCTs as part of a patient-centred approach to care. The degree apprenticeship with a health care provider is a newer route to becoming a podiatrist, and this suggests that perhaps there is a movement towards behaviour change being more standard.

4.5 Strengths and limitations of study

4.5.1 Strengths

4.5.1.1 Study design

The design of the study was appropriate for answering aims to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care and identify whether duration of qualification influenced the participants responses. A strength of electronic modes of delivering a questionnaire such as the one used in this study is that it has been shown to decrease the likelihood of entry-related errors compared to the traditional pen and paper method (Brandt 2006). To counteract the possible limitations of a solely quantitative, positivist approach, open questions were included in the questionnaire to add a qualitative element, increase the richness of the data, and address the research questions in a more comprehensive way (Garton et al 2006).

4.5.1.2 Peer review

A strength of the study is that the process of peer review was carried out not only in the creation of the questionnaire, but throughout the research process. The coding framework used for the content analysis was peer reviewed before being rigorously applied by two coders, and the process of thematic analysis was also peer reviewed. The transparent recording of the processes used for the qualitative part of the analysis as detailed above, including the coding and how themes were derived and coded, increases the credibility of findings and helps the reader assess the replicability of the process, ensuring meaningful results (Cook 2000). Furthermore, researcher triangulation such as the use of multiple coders can result in a more complex understanding of the data. What's more, the research team involved in the peer review comprised of health professionals who were not podiatrists, who were experts in both qualitative and quantitative method. They were consulted at every stage of the research process as a way of encouraging reflexivity and reduce researcher bias (Barrett et al. 2020). To increase transparency and trustworthiness, supporting quotations from different participants were also included.

4.5.1.3 Study Population

According to the HCPC website at the time the questionnaire was open (2018), 76% of HCPC registered podiatrists at that time were female, and 24% were male (HCPC 2018). The sample in this study was similar, with 81% of respondents being female and 18%

being male. Furthermore, the highest proportion of podiatrists on the HCPC register at the time the data was collected sat within the age range of 30-49 (42%), and the highest proportion of respondents in this study were within the similar age range of 31-50 (61%). So although the study population was small and it was not possible to compare the age exactly due to slightly different ranges, the study sample does seem to be reflective of the larger population of HCPC registered podiatrists in terms of these demographics.

4.5.2 Limitations

4.5.2.1 Data collection tool

To the author's knowledge a validated questionnaire tool to explore the practice and understanding of podiatrists regarding patient-centred support versus prescriptive instruction in their consultations regarding diabetic foot care does not currently exist. As no validated tool was available, a questionnaire was created by the author. Using a non-validated survey tool like this may decrease the validity and reliability of the results of a study (Willis 2005). However, steps were taken to help improve the questionnaire design and the tool was peer reviewed by an expert in behaviour change to increase the likelihood that the questions posed would answer the research questions, ultimately increasing validity and trustworthiness (Sim and Wright 2000).

The risk of response bias using a tool such as the one that was used in this study should also be acknowledged as participants may complete the questionnaire how they believe the researcher would like them to complete it, rather than answering honestly (Randall and Fernandes 1991). This would reduce the reliability of the results. To decrease the likelihood of this happening, the participant information sheet clearly stated that the questionnaire was anonymous, not a test of their knowledge or competence, and that answers that truly reflect the way they currently practice would give the most meaningful results.

4.5.2.2 Sampling

Part of the data collection process involved posting a link to relevant Facebook groups including footindiabetes and UK Podiatry. With this method, self-selection bias should be considered. In any given online community, there will be individuals who are more likely than others to complete online surveys which can limit the researchers' ability to make generalisations about study findings (Thompson et al. 2003).

4.5.2.3 Response rate

Questionnaires such as the one used in this study have a notoriously low response rates (Sheehan 2001). Existing literature on survey methods suggests that the use of multiple contacts is influential in improving the number of questionnaires returned (Edwards et al. 2009). Therefore, to help recruit as many participants as possible, a second 'reminder' email was sent out to all members of the College of Podiatry (approx. 10,385 individuals) two weeks after the initial invitation, and a reminder posted on the 'footindiabetes' and 'UK Podiatry' Facebook groups which had 1,744 and 6,136 members respectively at that time. Many of the individuals who received the link to the questionnaire via the College of Podiatry email would have been the same individuals who were members of the Facebook groups so it is not possible to calculate how many podiatrists received the link to the questionnaire and therefore response rate cannot be calculated.

A systematic review by Edwards et al. (2009) suggested that factors such as using non-monetary incentives, ensuring the questionnaire is short, including a statement that others had responded, and including a picture in the email could increase the response rate of an online survey. These factors could be implemented into any future research or if the study was to be repeated.

4.5.2.4 Sample size

At the time the link to the questionnaire was sent out to all HCPC registered podiatrists, there were 12,846 podiatrists on the HCPC register. Seventy eight podiatrists completed the questionnaire. A small sample size such as this can decrease the internal validity and caution must be taken when interpreting the findings of the study (Faber and Fonseca 2014). This small sample size can also reduce external validity and decrease the extent to which the results can be generalised to the rest of the population (Fincham 2008).

4.5.2.5 Reflexivity

By considering the relationships between the participants and themselves and practicing reflexivity, it is less likely that the researchers own beliefs will bias the study, and therefore the credibility, quality, and trustworthiness of the study are enhanced (Barrett et al. 2020). To encourage reflexivity, the researchers' position relative to the research participants was considered. As a practicing podiatrist exploring the practice and understanding of other podiatrists towards patient-centred support versus prescriptive instruction in their consultations, the researcher would be considered an 'insider researcher'. This can be a limitation as it can introduce bias. However, it can also be advantageous as an understanding of the question and the context in which it occurs can help the researcher to connect the theoretical and empirical aspects of the study (Barrett et al. 2020).

For complete transparency, the information included in the email sent out by the College of Podiatry that included the link to the study, stated that the researcher was a podiatrist. Furthermore, both Facebook groups in which the link to the study was posted by the researcher were groups where to be a member and post items you must be a podiatrist. This would mean that anyone accessing the questionnaire through the Facebook link would be aware that the researcher was also a podiatrist, increasing the validity.

In an attempt to practice reflexivity and ensure that my beliefs didn't influence the process I considered the following things:

- What was my motivation for carrying out this particular research?
- What underlying assumptions will I bring to it?
- How am I connected to the research theoretically, experientially, and emotionally?
- What effect will this have?

Haynes (2012)

This process is documented in Appendix 5.

I expected to find that the awareness of podiatrists in the UK regarding behaviour change techniques was poor, and that they would report that they were not using behaviour change techniques in their patient consultations. The results of this study suggest that this is not the case.

The strategies for reflexive awareness that I utilised included discussing and evaluating responses to the research subject, participants and processes with my supervisors. I also kept a research diary where I documented thoughts and feelings regarding the research process throughout. To help enhance rigour the processes used for the qualitative parts of the analysis have been recorded in a transparent manner. Furthermore, the wider research team, none of whom are podiatrists, were consulted at every stage of the research process.

Chapter 5. Conclusions

Diabetic foot disease has a significant detrimental impact on an individuals' quality of life and places an enormous financial burden on the NHS. Good foot self-care behaviours are a crucial approach in the prevention of diabetic foot disease, and a patient-centred approach using BCTs could potentially be used to improve foot self-care behaviours in the diabetic population. The aims of this study were to explore the practice and understanding of podiatrists towards patient-centred support versus prescriptive instruction in consultations regarding diabetic foot care and identify whether duration of qualification influenced the participants responses.

The background literature showed that there are few studies looking at the use of BCTs in a podiatry setting, and those that do exist differ in aims, delivery and duration of intervention, outcome measures, and outcomes. On the whole, the literature suggested that BCTs have the potential to improve patient care and clinical outcomes in a podiatry diabetic foot setting, but the existing studies were mostly assessed as being insufficiently powered with poor internal and external validity, highlighting a gap in the literature and a need for further robust research on the subject.

The results of this study showed conflict in the answers of respondents, suggesting a lack of understanding of the subject and of the terms, which may have led to respondents

over reporting their use of behaviour change techniques and a patient-led consultation style. A need for institutional changes and organisational support was highlighted by the respondents, including extra time to undertake training for podiatrists to develop the adequate skills, knowledge and confidence and extra time in appointments for podiatrists to implement a patient-led consultation style in their practice. The results of this study also showed no correlation between the number of years qualified and frequency of use of behaviour change techniques in consultations. The results also highlighted that an increased emphasis on teaching health psychology/behaviour change training may be required at undergraduate level in order to ensure graduates have a better knowledge and greater confidence with regards to implementing a patient-led consultation style in their practice from the outset of their clinical career.

The thesis began with a background chapter outlining DM, foot disease, the detrimental effects it has on the individuals who suffer with it, and the enormous cost to the NHS. The potential for the use of patient-centred care and behaviour change techniques in a podiatry setting was considered and the existing literature regarding this topic was presented and reviewed. In chapter 2 the methods were described, including the epistemological stance and methodology of the study, followed by chapter 3 which comprised the results. In chapter 4 the principle findings were examined, strengths and limitations of the study were explored, implications of findings to clinicians and policy makers discussed. The thesis ends with chapter 5, where conclusions and recommendations were made.

5.1 Recommendations

- Consider increased health psychology/behaviour change training for podiatrists at both undergraduate and postgraduate level. A recommendation would therefore be that the BSc Podiatry degree curriculum is reviewed and brought in line with the apprenticeship with regards to behaviour change techniques. At undergraduate level students should be given the opportunity to learn about BCTs and a patient-led approach, and be given time to practice the techniques prior to qualifying.
  At postgraduate level, podiatry departments across the country could encouraged to engage in training such as the Health Coaching training commissioned by Health Education England (HEE) in 2015. HEE have published a document outlining how commissioners and providers can develop health coaching capabilities amongst health professionals. This could be used as a frame work. Podiatrists Should work collaboratively with other health professionals such as those trained in health psychology.

- The results of this study could be used to direct further study, tying in with one of the NICE research recommendations to explore education and psycho-behavioural interventions for the prevention of diabetic foot complications (NICE 2015). There are currently no RCTs investigating the effect of BCTs on clinical outcomes related to diabetic foot problems. The author suggests that an RCT in a podiatry setting comparing standard care with a behavioural approach on outcomes such as diabetic foot ulcer incidence, foot self-care behaviours or confidence to self-care would be most appropriate.

- There was a poor understanding of BCTs which may have led to an over reporting of the use of BCTs within podiatry practice. An observational study to observe consultations would further develop the understanding of podiatry practice. BCT training could be provided for staff and practice reassessed.

- It may also be beneficial to carry out further study to explore patients' experiences with a behaviour change intervention delivered by podiatrists for prevention of diabetic foot complications. When designing new health care interventions, health care providers may overlook the perspectives and needs of the individuals they are aimed at, who often have complex health and social care needs (Webster et al. 2015). This further study could give provide important insights that can inform intervention design. It may be beneficial to discuss this topic with local patient focus groups, including those that use the diabetic foot clinic services.

- Qualified podiatrists should be upskilled and given appropriate training to increase their understanding of BCTs and how to use them as part of a person-centred approach to encourage appropriate foot self-care. This would also benefit podiatry students or those taking the podiatry apprenticeship route as they shadow and work with qualified podiatrists. This is important because the student podiatrists may learn via role modelling, a powerful teaching tool where the qualified podiatrist passes on knowledge, skills, and values. If qualified podiatrists, are not up to date with regards

to using a person-centred approach using BCTs, this can have a negative role model effect (Cruess et al. 2008).

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Appendix 1. Participant Information Sheet

Participant Information Sheet

Study Title

How do podiatrists in the UK promote foot self-care and support positive behaviour change in patients with diabetes mellitus?

What is the purpose of this study?

The purpose of this study is to establish how podiatrists in the UK promote foot self-care and support behaviour change in their patients with Diabetes Mellitus.

Why have I been invited to participate?

All HCPC registered podiatrists working in the UK are invited to take part in the survey. We aim to obtain a representative response from a range of podiatrists working in the UK across the NHS and private sectors and across a range of experience – so your unique response is very valuable to us.

What will I be asked to do?

The survey is divided into three sections. In section one you will be asked general questions regarding your age, gender, qualifications, time since qualifying, and geographical location. Section two is about your current practice and your consultation style, and section three asks about the facilitators and barriers to supporting patients to positively change their health behaviour.

Do I have to take part?

Your involvement in this study is voluntary, and there will be no consequences should you decide not to participate. If you do choose to take part, you will be asked to give consent by ticking 'I agree' to the consent statements, and you will then be directed to the online survey.

What are the possible disadvantages of taking part?

It will take a short amount of time to complete the survey. It is unlikely that anyone would be harmed in completing the questionnaire, however if you are affected by any of the questions or would like help with supporting patients with positive behaviour change, we

suggest that you seek the appropriate support through the services given at the bottom of this information sheet.

What are the possible benefits of taking part?

This study will advance our understanding of how podiatrists support their patients with diabetes to positively change self-care behaviours, the consultation styles currently being utilised by podiatrists, and how this could be improved. As a podiatrist you have the opportunity to express your views on this subject and the role of self-care in podiatry practice.

What happens to the information once this study is concluded?

This survey is anonymous and you will not be identified during data collection, storage or write up. All data collected will be kept confidential (subject to legal limitations). The raw data will be kept on file for five years and will then be permanently destroyed. Because your answers will be fully anonymised it will not be possible to withdraw them from the study once you have completed the survey.

Contact for further information

Content redacted from the online thesis on data protection grounds.

Thank you for taking the time to participate in this survey. Your help is very much appreciated.

Other sources of information:

Health coaching for behaviour change Health Education England: https://eoeleadership.hee.nhs.uk/Health_Coaching_Training_Programmes

Appendix 2. Questionnaire

How do podiatrists in the UK promote foot self-care and support positive behaviour change in patients with diabetes mellitus?

Page 1: Consent

I have read and understood the information provided in the participant information sheet.
* *Required*

- Yes

I understand that because my answers will be fully anonymised, it will not be possible to withdraw them from the study once I have completed the survey. * *Required*

- Yes

I confirm that I am aged 18 or over. * *Required*

- Yes

I agree to take part in this questionnaire survey. * *Required*

- Yes

Page 2: Demographics

What gender do you identify as? * *Required*

- Male
- Female
- Other
- Prefer not to say

Please select your age range

What sector do you work in?

- NHS
- Private sector
- Both
- Other

If you selected Other, please specify:

At which University did you study Podiatry?

How many years have you been qualified?

What region do you work in?

- South Midlands
- East Midlands
- East of England
- Wales
- South East
- South West
- London
- Scotland
- North West
- North East
- Yorkshire and Humber
- Northern Ireland

Page 3: Current Practice

What does the term 'behaviour change techniques' mean to you?

To what extent do you use behaviour change techniques in your patient consultations?

Please don't select more than 1 answer(s) per row.

	Often	Very Often	Unsure	Not very often	Not at all
Frequency of use of behaviour change techniques in your consultations	☐	☐	☐	☐	☐

What does the term 'patient-led consultation' mean to you?

To what extent are your consultations patient-led?

Please don't select more than 1 answer(s) per row.

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
My consultations are patient-led	☐	☐	☐	☐	☐

Please rate to what extent you agree with the following statement: In my patient consultations I use language such as "do.., don't.., can you.., will you.., you could.., you should.."

- Agree
- Strongly agree
- Unsure
- Disagree
- Strongly disagree

Please rate to what extent you agree with the following statement: In my patient consultations I use language such as "What are your thoughts..? What ideas do you have..? What might work for you..? How have you got on before..? What might you manage..? How will you manage this..? What are you going to do next..?"

- Agree
- Strongly agree
- Unsure
- Disagree
- Strongly disagree

How confident are you at negotiating positive behaviour change with your patients?

- Not at all confident
- Confident
- Very confident

Page 4: Barriers and Facilitators

During your undergraduate BSc Podiatry degree were you taught about health psychology and the psychology of self-care?

- ○ Yes
- ○ No
- ○ Not sure

What do you think are the barriers to implementing a patient-led consultation style in your practice?

What training or resources do you think would help increase your ability to negotiate positive behaviour change with your patients?

Page 5: Thank you for taking part.

Key for selection options

3 - Please select your age range

18-30
31-40
41-50
51-60
61-70
71-80

6 - How many years have you been qualified?

1
2
3
4
5
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16
17
18
19
20
>20

Appendix 3. Thematic analysis

Question 15. What do you think are the barriers to implementing a patient-led consultation style in your practice?

Extract	Codes
time understanding locus of control	Time constraints Lack of knowledge
Patients unrealistic expectations.	Patient expectations
There isn't much training in this in undergrad or CPD as too often treatment plans are taught to be too 'strict'. I feel I personally have gained a strict very understanding of these types of 'teaching' techniques since training in a different profession.	Lack of available training
It's having experience and knowledge to enable a clinician to confidently approach any subject - without confidence all the knowledge in the world could be received in a poor manner.	Lack of confidence
None really other than the initial time taken to learn the "technique" and implement it.	Time constraints
The only barrier for me is having to move around to different clinics and not having continuity with patients	Lack of continuity with patients
Beliefs and cultures	Beliefs and cultures
Getting started with them and adhering to them, often we carry on practice as normal focussing on what is available to us. Not necessarily what could be available to the patient beyond our resources.	Lack of resources Doing things how they've always been done
Time in consultations Misconceptions about the role of podiatry	Lack of time Misconceptions re role of podiatrist
Time constraints Lack of training specifically in motivation techniques	Time constraints
Working in private practice there are not other support networks around. Patients paying privately often do not want to take control of their health and are often used to and are more comfortable being instructed.	Lack of support in private practice Patients wanting to be told what to do
time lack of understanding for patient	Time constraints Lack of patient understanding

Time Staff and pt understanding Service spec remit (discharge policy and criteria)	Time constraints Lack of understanding
Being clear with communication and time constraints	Time constraints
Cost of treatments / repeat appointments. Cost of creams / orthotics / antifungals. The patients not fully understanding the role of the podiatrists (they think their medical history is not relivant to getting their toenails cut)	Financial cost Misconceptions re role of podiatrist
Lack of education and support and having to identify own skills with mistakes learnt to engage with the patients Lack of time ,distractions in clinic ie emergency calls , messages etc	Lack of education Time constraints
The complicated relationship between a patient paying for and expecting one approach and the need as a clinician to impart knowledge and advice that may not be something the patient is willing to hear.	Private practice and the patients expectations
If pt not interested or willing to participate it won't work. Also need clinician to be willing to participate	Lack of willingness of pod and patient to participate
Time constraints Some types of urgent presenting problems that require a dictated treatment plan	Time constraints Need for dictated treatment plan with some problems
Not knowing how to do it.	Lack of knowledge
The training I had was a long time ago and not something I've revisited	Lack of knowledge
Patients believing in Dr Google's weird and wonderful stuff	Patients tendency to google problems for answers
time, patient specific resources (tailored written education), specific patient (non-compliance)	Time constraints Lack of resources Non-compliance
Type of patient your dealing with / lack of continuity so lack of follow up from the next pod	Lack of continuity with patients
Expectations of the patient often with chronic incurable conditions when outcome is unlikely to improve their quality of life that many once used to have before illness is a common barrier.	Patient expectations
Perceived time and learning needs and confidence	Time constraints Lack of knowledge Lack of confidence
None	None
limited time to give patients information.	Time constraints

Patients stuck in their ways	Patients not wanting to change
Time and knowledge that I am doing it right	Time constraints Lack of knowledge
Time Frequency of patient contact limited	Time constraints Limited patient contact
Tome	Time constraints
None other than lack of training in this area.	Lack of training
Overwhelming for patient as not used to being asked their thoughts. Comorbidities causing patient to not know what to manage or how to manage	Resistance from patients
Time	Time constraints
Lack of time during appointmrnts to ensure complete and effective dialogue, education and Q&A's.	Time constraints
Time fundamentally, patients own agenda/ lifestyle.	Time constraints
Don't always have the time to sit and talk.	Time constraints
Difficult as some patients do not want to be the one in charge of their own health, they want you as the professional to take the lead and tell them how to take care of themselves	Resistance from patients Patients wanting to be told what to do, prefer directive approach
Time, cpd provision	Time constraints Lack of training
None	None
Patients may not want treatment that is going to be the most beneficial to them and their condition. Patient may not also fully understand the implications of denying or not allowing certain treatments	Non-compliance Lack of patient understanding
A patient who is lost in his health care fed up with all appointment and intrusion into his life , depression,poor understanding and education, low esteem and belief in improvement , social standing, money, housing, family friend cater support	Patients not wanting to engage
Time costaints to finish a topic.	Time constraints
Time, resources	Time constraints Lack of resources
Financial, psychological, personal and social issues of patient	Financial, psychological, personal and social issues of patient
The patient’s expectations of my role. Sometimes time constraints but in private practice it is mostly patient led.	Time constraints
My personal Confidence in managing people, their expectations	Lack of clinician confidence

Very limited on time to explore themes fully. Also patients attend in a clinical space with expectations of treatment. It works better when the room is set for discussion you are sat with the patient at a level to talk with eye contact, not under their feet.	Time constraints Poor clinic set up for discussion
time constraints, patient compliance, lmitied understanding to a complex diagnosis	Time constraints
Time. Seeing same podiatrist each apt so can build on discussions and rapport with patient and continue plan. Patient long held belief that they do not need to participate in own care.	Time constraints Lack of patient engagement
Time	Time constraints
Consultation time Lack of coaching skills	Time constraints
time	Time constrains
Non-compliance of patient Barriers to understanding Language barriers Mental health issues	Language barriers Patient non-compliance
Being confident to put the questions the right way so that patients take on board their care. Taking little steps at a time realizing that rome was not built in day	Lack of confidence of clinician
Not as such taught but some of the lecturers were very skilled in passing on information. Time is occasionally an issue but the main one was when I asked a lady what reason she'd made the for "what can I help with today? " type question she replied "don't you know? I expected an expert" that was many years ago. You get better with experience and always learning.	Time constraints Patient expectations
mental health mental capacity to understand	Mental health Lack of patient understanding
time	Time constraints
Patients expect us to tell them what they need to do most of the time.	Patient expectations
Age of patient. They sometimes just want to be told what to do. Resting, this isn't always possible for the patient due to personal circumstances.	Patient expectations
none	None
Work with patients with learning disabilities which impacts on their communication and cognitive ability	Lack of patient understanding

To add to previous question original qualification - diploma and not degree. So first Barrier is both professional knowledge and communication style, Second is to an extent patient engagement, harder with patients who "just want us to make it better" Third is time in consultation, another patient in the waiting room. But investment in the conversation will improve overall outcome	Lack of clinician knowledge Patient expectations Time constraints
New practices & time pressures... Lack of training... recording requirements, Low confidence of implementing...	Time constraints Lack of training and clinician knowledge Lack of clinician confidence
Lack of time	Time constraints
Time. Patient's expectations - having something done to them rather than being involved in their own self-care.	Time constraints Patient expectations
lack of support from management, lack of time available, lack of ongoing support and training, lack of podiatry specific training	Lack of support from management Time constraints Lack of training
Time	Time constraints
Trust, being relaxed, assumptions, predjudices, language, time.	Time constraints
Some patient have a negative attitude to trying new products or techniques "they have tried them all" or "don't have time"	Patient expectations
depends on the patient	Patient dependent

Codes	Themes
Time constraints	Lack of managerial support
Lack of available training	
Lack of resources	
Poor clinic set up for discussion	
Financial cost	
Lack of support from management	
Lack of clinician confidence	Need for increased clinician knowledge and confidence re patient-led consultation style
Lack of clinician knowledge	
Clinicians doing things how they've always been done	Resistance to change
Patients not wanting to change	
Patient expectations	
Lack of willingness of pod and patient to participate	
Patients wanting to be told what to do	

Question 16. What training or resources do you think would help increase your ability to negotiate positive behaviour change with your patients?

Extract	Codes
More time	More appointment time
Perhaps a patients' view of it.	Patients perspective
Gaining a further understanding of learning types and how to interact with the different types.	Increased knowledge
On line	Online
Educational videos would be nice or workshops.	Videos or workshops
Understanding cross cultural differences	Understanding cross cultural differences
Making Every Contact Count (MECC) training is fab. I've recently attended this course and it provides you with the tools and the language to use to help promote Patient self-care	Making every contact count training
It would come with repetition in practice.	Repetition in practice
Better understanding Training package on the subject that could be accessed via internet	Increased knowledge Online training package
Motivational techniques and patient psychology	Motivational techniques and psychology training
As a private practitioner CPD is vitally important not just for learning but being able to share experiences and learning out if a fairly solitary environment. Having time and finances to be able to take time out of clinic is relevant and sometimes not possible. A better working relationship with other health practitioners is desirable but often not available.	Increased time for training for private practitioners
motivation interview training	Motivational interviewing training
Ongoing HC trg Culture backed by the approach	Health coaching training ongoing
More discussion with other health professionals and additional training on psychological techniques	Additional training on psychological techniques
Cpd focusing on patient psychology and more information from patients with diabetes and how they have found positive changes to their health after following advice re behaviour change advice from a podiatrist so that it can be used to further aid change	CPD focusing on patient psychology Information from patients as to what has worked for them

to other patients and used as an advert or marketing tool to encourage other patients to help self care.	
Regular update about different consultation styles and techniques, extra appt times to engage with pt and make experience more meaningful	Training Increased appointment time
Printed resources and the ability to signpost them to meaningful and easily accessible advice/ assistance.	Printed resources Signposting information
How to discuss difficult subjects	Training on how to discuss difficult subjects
Already received health coaching training	Health coaching training
Access to information whether internet or paper	Access to info via internet or paper
Role play training	Role play training
A refresher course, maybe at a beach meeting or a session at a conference, or online training.	Referesher courses Online training Lecture at conference
Pictorial evidence of potential complications, negotiation techniques.	Negotiation techniques Pictures to educate patients
Clinical supervision between multi disciplinery teams on a regular basis and promotion of foot health issues within institutional services.	Clinical supervision
Co-production	Co-production
Partaking in health coaching training as we call it in our area.	Health coaching training
Ability to ask relevant questions to guide patient. Models or pictures to educate.	Pictures to educate patients
Pictures always help	Pictures
A training course Update cpd	Training
Motivational interviewing is a powerful training session Recommend to all	Motivational interviewing training
Language training/ techniques for getting the point across in a non-judgemental way	Training
Training as undergraduates	Training as undergrads
Courses which encourage and teaches positive behaviour changes	Courses/training
Training and more awareness. Longer time spent with patients to allow them to say exactly what they want to say.	Training
I'm not sure, but I expect there are courses covering just this thing!	Courses
More time and better educational tools to help facilitate change	More time in consultations Educational tools
Unsure possibly some training courses	Training courses
It’s having the confidence in your own abilities	Confidence

Actual training on it	Training
Written information, possibly a course in good practice.	Written information
Courses/group sessions learning about how certain techniques can be used (health coaching) as well as learning how other people have used certain techniques that can be adopted	Course/training
Psychology working alongside us in community , stronger links and finance in social support , self-help and patient groups	Working with psychology health professionals More funding
To initiate bite size changes and not be distracted into wider conversations	Misunderstood the question
Unsure	Unsure
Motivational interviewing Coaching course	Motivational interviewing course
Some psychology training	Psychology training
A better knowledge of psychology, attending a course on motivational interviewing. Working on building my own self confidence	Psychology training Motivational interviewing training Build confidence
More available rooms and dedicated time to talking.	Rooms and time for talking to patients
more awareness of this with prior leaflets educaiton for the patients before initial consultation.	Leaflets Education for patient prior to consultation
Health coaching mandatory yearly online course/refresher?	Health coaching mandatory training
Face to face and online learning	Courses/training
Coaching course Being able to see technique used in a podiatry consultation	Coaching course
Cpd	Training
health coaching	Health coaching training
Communication skills training	Communication skills training
more time for appt	Extra appointment time
I'm lucky that I've had continuing training from Stuart Mercer CARE system, motivational interviewing etc. Some training via local gps some by the department	Stuart Mercer CARE system training Motivational interviewing training
patient feedback	Patient feedback
CPD based trainings	Training
Health coaching, psychology course, communicating with patients course, a course when you can also learn about your own personality and how to may come across to other people	Health coaching training Psychology course
Have already done behaviour change courses with my trust.	Behaviour change course

health Ed certificate literature/ leaflets internet	Leaflets Health education training
Easy read material	Reading materials for patients
Current practice built up from reading articles, building on natural style of communication generally and what appears to work best. As such either more formal learning or have thought about looking for Video clips of what works well in consultation and what does not, have seen some with GPs in diagnosis with patient, but Podiatry specific examples, using actual patients or actors, would be useful for myself and colleagues in service	Formal training Online training -examples, eg videos to watch
Training and understanding, Added time ? How to implement & record change, Auditing / Service improvement	Training
Any validated training would be of benefit as I don't think I've had any formal training.	Training
Have had motivational interviewing training, really beneficial. Think this is something that should be given in undergraduate courses. But added to this introduction of greater patient involvement and choice must be supported by a host of wider changes to the organisational, operational and institutional culture of the NHS	Motivational interviewing training Training at undergrad level Change to institutional culture of NHS as a whole
ongoing podiatry specific training and support, support from management	Podiatry specific training Support from managers
Unsure	Unsure
Pods should study listening and empathy, and probably do some personal self-development similar to counsellors.	Study listening and empathy
Posters, leaflets for self-help. Free samples for patients to try.	Posters Leaflets
Not sure, possibly assertive training.	Unsure

Codes	Themes
More appointment time	Support from managers /institutional change, including longer appointment times
Change to institutional culture of NHS as a whole	
Support from managers	
Videos or workshops	Training in behaviour change techniques, starting at undergraduate level.
Making every contact count training	
Online training package	
Motivational techniques and psychology training	

Motivational interviewing training	
Health coaching training ongoing	
Additional training on psychological techniques	
Training as undergrads	
Courses	
Communication skills training	
Stuart Mercer CARE system training	
Health education training	
Misunderstood the question	Uncertainty
Unsure	

- Skills and confidence
    - Not knowing how to do it
    - knowledge that I am doing it right
    - Low confidence

- Patients do not want to take control
    - Patient belief that they do not need to participate in own care
    - Patients do not want to take control of their health

- The system
    - Time constraints
    - Time
    - Lack of continuity so lack of follow up from the next pod
    - A better working relationship with other health practitioners

Appendix 4. Thematic Analysis process – prior to peer review

Question 15. What do you think are the barriers to implementing a patient-led consultation style in your practice?

Lack of managerial support:

Time
The initial time taken to learn the "technique" and implement it.
Having to move around to different clinics and not having continuity with patients
Time in consultations
Time constraints
Time
Time
Time constraints
Lack of education and support
Lack of time
Time constraints
Time
Lack of continuity so lack of follow up from the next pod
Limited time to give patients information
Time
Time
Time
Frequency of patient contact limited
Time
Lack of time during appointments
Time
Don't always have the time to sit and talk
Time and cpd provision
Time constraints
Time, resources
Sometimes time constraints
Very limited on time to explore themes fully
Time constraints

Time. Seeing same podiatrist each apt so can build on discussions and rapport with patient and continue plan

Time

Consultation time

Time

Time is occasionally an issue

Time

time in consultation

Time pressures

Lack of time

Time

Lack of support from management, lack of time available, lack of ongoing support and training

Time

Resistance to change:

Often we carry on practice as normal

Prejudices

Some patients have a negative attitude to trying new products or techniques

Patient long held belief that they do not need to participate in own care

Patients do not want to take control of their health and are often used to and are more comfortable being instructed.

Lack of clinician knowledge/confidence:

Understanding

There isn't much training in this in undergrad or CPD

It's having experience and knowledge to enable a clinician to confidently approach any subject

?Beliefs and cultures

Lack of training

Staff and pt understanding

Lack of education and support

Need clinician to be willing to participate

Not knowing how to do it

The training I had was a long time ago and not something I've revisited

Perceived time and learning needs and confidence

knowledge that I am doing it right

lack of training in this area

My personal Confidence in managing people, their expectations

Lack of coaching skills

Being confident to put the questions the right way so that patients take on board their care

Both professional knowledge and communication style

Lack of training

Low confidence of implementing

Lack of ongoing support and training

The problem lies with the patient:

Patients unrealistic expectations

?Beliefs and cultures

Misconceptions about the role of podiatry

Working in private practice there are not other support networks around. Patients paying privately often do not want to take control of their health and are often used to and are more comfortable being instructed.

Lack of understanding for patient

Staff and pt understanding

The patients not fully understanding the role of the podiatrists

If pt not interested or willing to participate it won't work

Patients believing in Dr Google's weird and wonderful stuff

Patient (non-compliance)

Type of patient your dealing with

Expectations of the patient

Patients stuck in their ways

Overwhelming for patient as not used to being asked their thoughts

Patients own agenda/ lifestyle

Some patients do not want to be the one in charge of their own health

Patients may not want treatment that is going to be the most beneficial to them and their condition. Patient may not also fully understand the implications of denying or not allowing certain treatments

A patient who is lost in his health care fed up with all appointment and intrusion into his life, depression, poor understanding and education, low esteem and belief in improvement

Financial, psychological, personal and social issues of patient

The patient's expectations of my role.

Patients attend in a clinical space with expectations of treatment

Patient compliance, limited understanding to a complex diagnosis

Patient long held belief that they do not need to participate in own care

Non-compliance of patient, barriers to understanding, language barriers, mental health issues

The main one was when I asked a lady what reason she'd made the for "what can I help with today? " type question she replied "don't you know? I expected an expert"

Mental health, mental capacity to understand

Patients expect us to tell them what they need to do most of the time

Age of patient. They sometimes just want to be told what to do

Work with patients with learning disabilities which impacts on their communication and cognitive ability

Patient engagement, harder with patients who "just want us to make it better"

Patient's expectations - having something done to them rather than being involved in their own self-care.

Some patient have a negative attitude to trying new products or techniques

Depends on the patient

Private practice setting not conducive to this style:

Working in private practice there are not other support networks around

The complicated relationship between a patient paying for and expecting one approach and the need as a clinician to impart knowledge and advice

Question 16. What training or resources do you think would help increase your ability to

negotiate positive behaviour change with your patients?

Increased managerial support:

More time

Time and finances

Extra appt times

Longer time spent with patients

More time and better educational tools

More available rooms and dedicated time to talking

More time for appt

Added time

Support from management

Training and resources for clinicians:

Gaining a further understanding of learning types and how to interact with the different types

On line

Educational videos would be nice or workshops

Making Every Contact Count (MECC) training

It would come with repetition in practice

Better understanding training package on the subject that could be accessed via internet

Motivational techniques and patient psychology

CPD

Motivation interview training

HC trg

Additional training on psychological techniques

Cpd focusing on patient psychology

Regular update about different consultation styles and techniques

How to discuss difficult subjects

Health coaching training

Access to information whether internet or paper

Role play training

Refresher course

Online training

Health coaching training

Ability to ask relevant questions to guide patient

A training course

Update cpd

Motivational interviewing training

Language training/ techniques for getting the point across in a non judgemental way

Training as undergraduates

Courses which encourage and teaches positive behaviour changes

Training and more awareness

I expect there are courses covering just this thing!

Possibly some training courses

It's having the confidence in your own abilities

Actual training on it

Written information, possibly a course in good practice

Courses/group sessions learning about how certain techniques can be used (health coaching)

To initiate bite size changes and not be distracted into wider conversations

Motivational interviewing, coaching course

Some psychology training

Better knowledge of psychology, attending a course on motivational interviewing

Working on building my own self confidence

Health coaching mandatory yearly online

Face to face and online learning

Coaching course, being able to see technique used in a podiatry consultation

CPD

Health coaching

Communication skills training

Continuing training

CPD based trainings

Health coaching, psychology course, communicating with patients course, a course when you can also learn about your own personality and how to may come across to other people

Behaviour change courses

Health Ed certificate, literature/ leaflets, internet

More formal learning

Video clips

Training and understanding

Any validated training

Motivational interviewing training should be given in undergraduate courses

Podiatry specific training and support

Study listening and empathy, and probably do some personal self-development similar to counsellors.

Possibly assertive training.

Resources for patients:

Printed resources and the ability to signpost them to meaningful and easily accessible advice/ assistance

Pictorial evidence of potential complications, negotiation techniques

Models or pictures to educate

Pictures always help

Prior leaflets educaiton for the patients before initial consultation

Easy read material

Posters, leaflets for self-help. Free samples for patients to try.

Working with other health professionals:

A better working relationship with other health practitioners

Discussion with other health professionals

Clinical supervision between multi disciplinery teams

Psychology working alongside us in community

Wider institutional/cultural change:

Culture backed by the approach

Co-production

Must be supported by a host of wider changes to the organisational, operational and institutional culture of the NHS

Q15 What do you think are the barriers to implementing a patient-led consultation style in your practice?

Lack of managerial support

Resistance to change

Lack of clinician knowledge/confidence

The problem lies with the patient

Private practice setting not conducive to this style

No barriers

Q16 What training or resources do you think would help increase your ability to negotiate positive behaviour change with your patients?

Increased managerial support

Training and resources for clinicians

Resources for patients

Working with other health professionals

Wider institutional/cultural change

Themes from both

- Clinician knowledge/confidence: Training and resources for clinicians: Resistance to change: staff Resources for patients
- The problem lies with the patient: Resistance to change: patients
- Patients' perception of the role of the podiatrists
- Wider institutional change: time and managerial support: Private practice setting not conducive to this style: Working with other health professionals

Appendix 5. Reflexivity exercise

What was my motivation for carrying out this particular research?

- A desire to improve patient care
- Introduced to 'Health Coaching' training as a department (NHS Podiatry CPFT), however it was never really translated into practice
- Research tells us that education alone does not lead to behaviour change so why do we continue to focus on education ie giving leaflets, giving of advice
- Potential for podiatrists to use behaviour change techniques to support patients with diabetes to self-care and potentially prevent diabetic foot ulceration
- First need to find out what is the current situation. What are podiatrists currently doing and what is their understanding of the subject?

What underlying assumptions did I start with?

- Behaviour change techniques not currently being used to any great extent in a podiatry diabetic foot setting
- Knowledge of behaviour change techniques would be relatively poor

How am I connected to the research theoretically, experientially, and emotionally?

- Due to being a podiatrist investigating the knowledge and practices of other podiatrists/my colleagues brings some feelings of not wanting to report on things that may be perceived as negative such as a poor understanding.
- My ontological position, like that of the study, is of a single underlying reality, with an epistemological stance that is positivist, and fits into empirico-analytical paradigm. This study was descriptive as this is best suited to the research question and is designed to determine what exists, or in this case what is happening rather than trying to determine cause and effect. However, open questions were included to add a qualitative element to the questionnaire, something I realise I am less comfortable with.

What effect will this have?

- These things have the potential to affect the whole of the research process, from the production of the questionnaire (the way I might word the questions and the questions that I choose to ask), to the analysis - particularly the processes of content and thematic analysis. Therefore reflexivity must be practiced, and peer review and transparent processes are important throughout.